



# Department of Defense Military Health System (DOD MHS)

GreenGov Symposium

Economic Value of Green Facilities

*November 02, 2011*



Report Documentation Page				Form Approved OMB No. 0704-0188	
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1. REPORT DATE <b>02 NOV 2011</b>		2. REPORT TYPE		3. DATES COVERED <b>00-00-2011 to 00-00-2011</b>	
4. TITLE AND SUBTITLE <b>Economic Value of Green Facilities</b>				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>Department of Defense, DoD Military Health System (MHS), Washington, DC, 20301</b>				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release; distribution unlimited</b>					
13. SUPPLEMENTARY NOTES <b>Presented at the GreenGov Symposium, October 31 - November 2, 2011, Washington, DC</b>					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT <b>Same as Report (SAR)</b>	18. NUMBER OF PAGES <b>11</b>	19a. NAME OF RESPONSIBLE PERSON
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			



# Introduction – Many Delivery Platforms





# Introduction – Many Locations

## Pick a location...

DoD's MHS has likely provided care there:

- Direct Patient Care of Service Members & Families
- Veterans
- Humanitarian Aid
- Disaster Relief
- Infectious Disease Response
- War Zone Casualty Care
- Etc.

## DoD Military Health System (MHS)

- Approximately 77million GSF of facilities:
  - Hospital Facilities – 59
  - Medical Clinic Facilities – 364
  - Dental Clinic Facilities – 282
  - Veterinary Facilities – 288
  - Multiple Medical Research Laboratories





# DoD Strategic Sustainability Performance Plan (SSPP)

“Sustainability” and “sustainable” mean to create and maintain conditions, under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic, and other requirements of present and future generations of Americans.

— *Executive Orders 13423 & 13514*

## DoD Priorities:

1. Energy and Reliance on Fossil Fuels
2. Chemicals of Environmental Concern
3. Water Resources Management
4. Maintaining Readiness in the Face of Climate Change



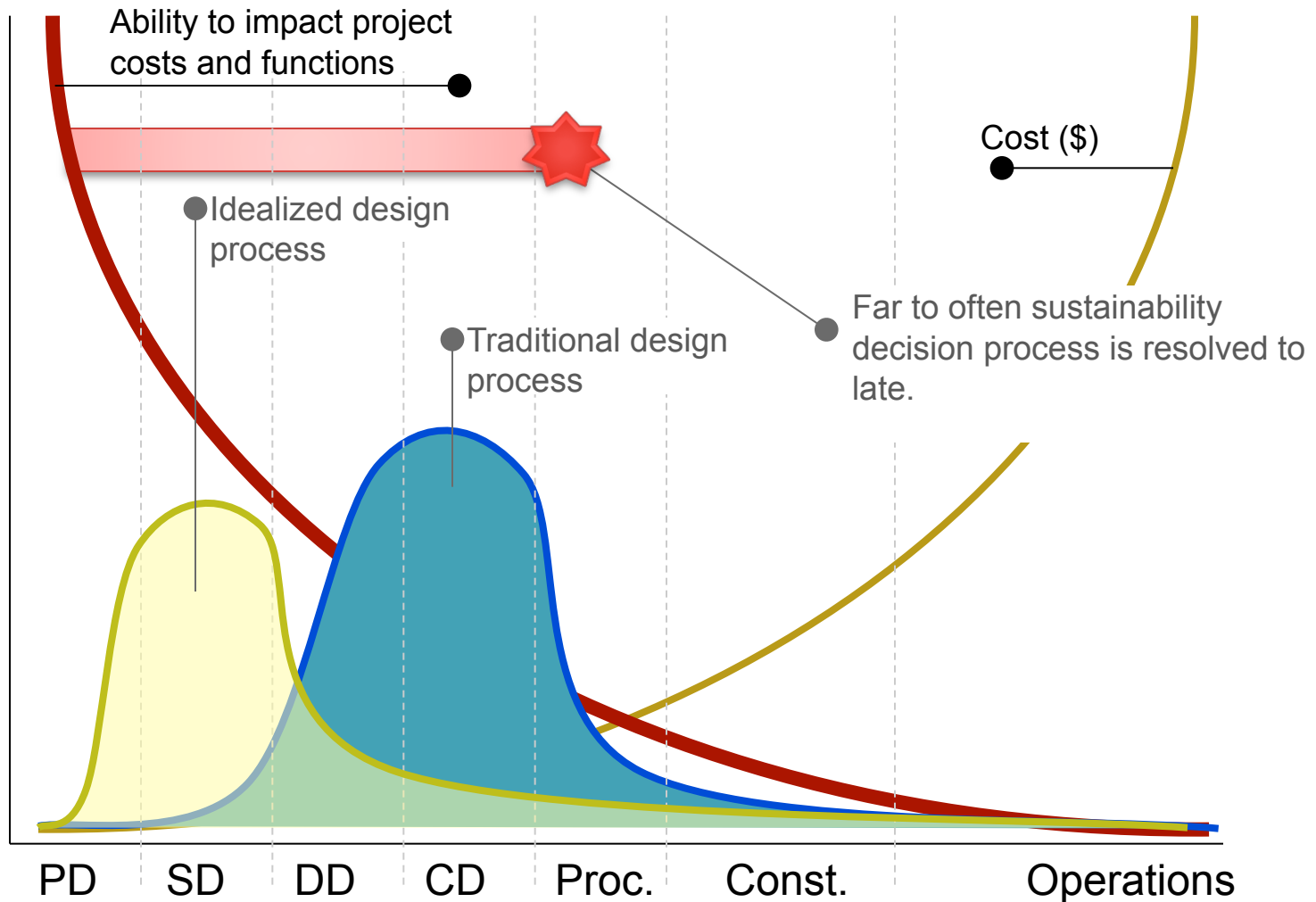
## DoD Energy Security

“Energy security for the Department means having assured access to reliable supplies of energy and the ability to protect and deliver sufficient energy to meet operational needs. Energy efficiency can serve as a force multiplier, because it increases the range and endurance of forces in the field and can reduce the number of combat forces diverted to protect energy supply lines, which are vulnerable to both asymmetric and conventional attacks and disruptions.”

— *DoD Quadrennial Defense Review, 2010*



# Making decisions sooner = higher probability of good implementation.





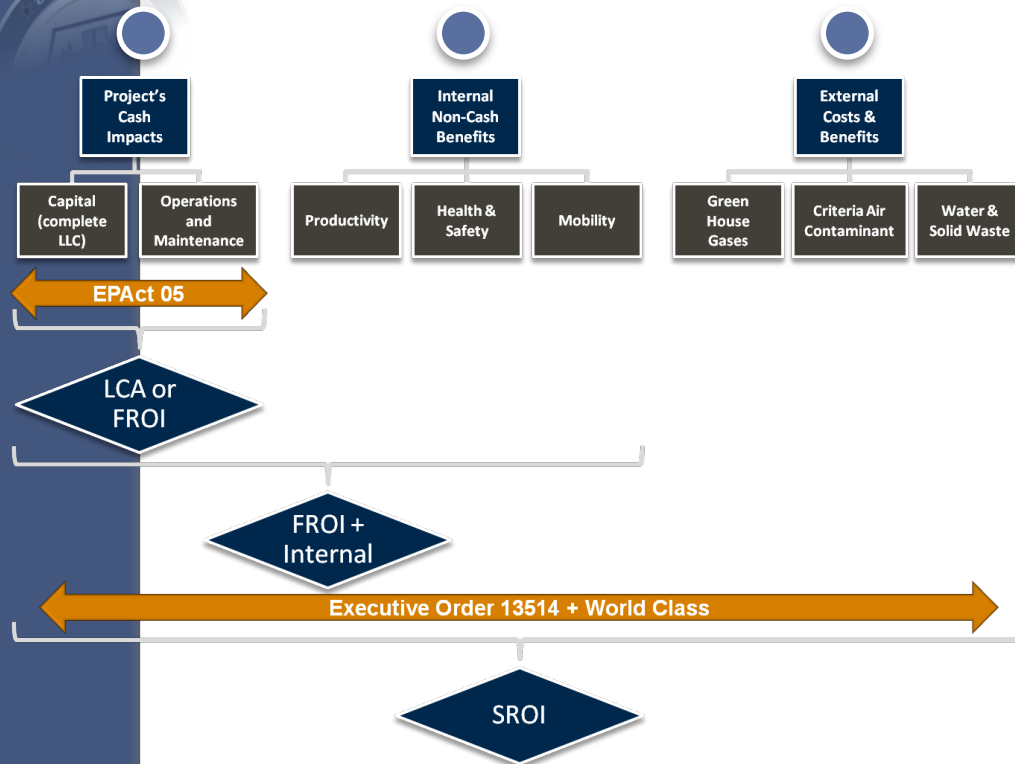
Bringing the discussion to the board room. Using the fundamentals of economics to bring transparency, objectivity, scalability to the table plus addressing variability.

## **HOW DO WE HAVE AN EFFECTIVE DIALOGUE?**



# SROI Methodology Applied

Enhanced LCCA w/Risk Analysis

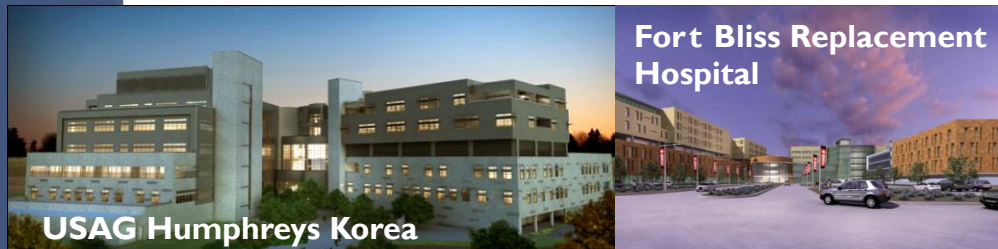


## Three Primary Perspectives

- Project Cash Impacts
- Internal Non-Cash Benefits
- External Cash & Benefits

## Pilot Projects

- Fort Belvoir Community Hospital
- USAG Humphreys in Korea
- Fort Bliss Replacement Hospital







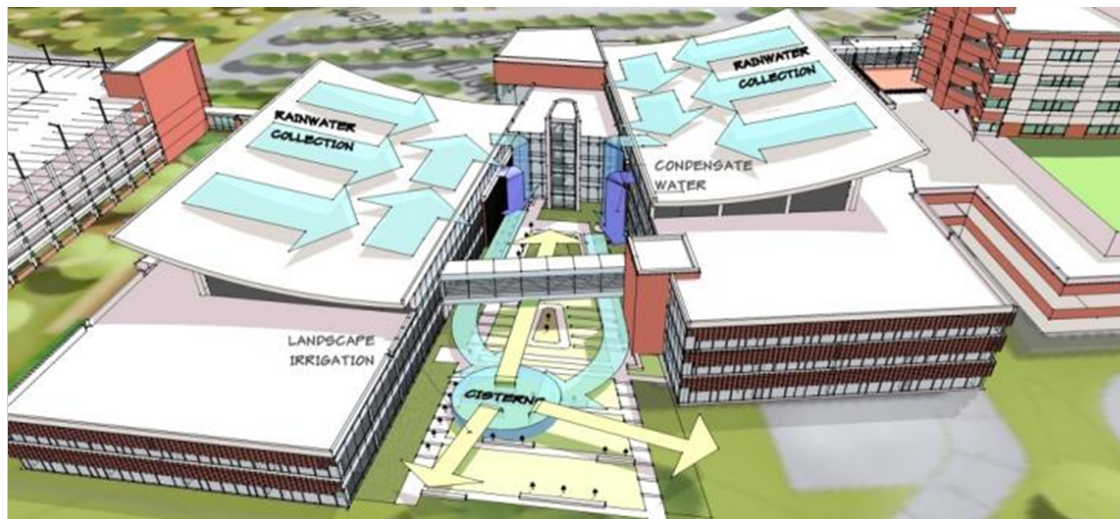
# Water Efficiency

## Rainwater Harvesting & Condensate Collection Fort Belvoir Community Hospital

Great idea and intent, but how do we evaluate if it makes sense from a facility life cycle management (FLCM) perspective?

### Monetizing the attributes of the proposal

- Project Cash Impacts
- Internal Non-Cash Benefits
- External Cash & Benefits



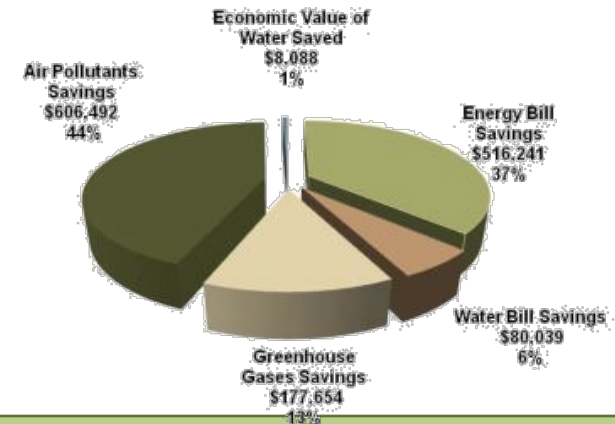
Irrigation	Irrigation Demand	Inflow	Savings
Permanent Irrigation (after first 2 years)	867,444 gal	1,640,602 gal	100%

Compliments of HDR, Inc.



# SROI Results

## Fort Belvoir Community Hospital



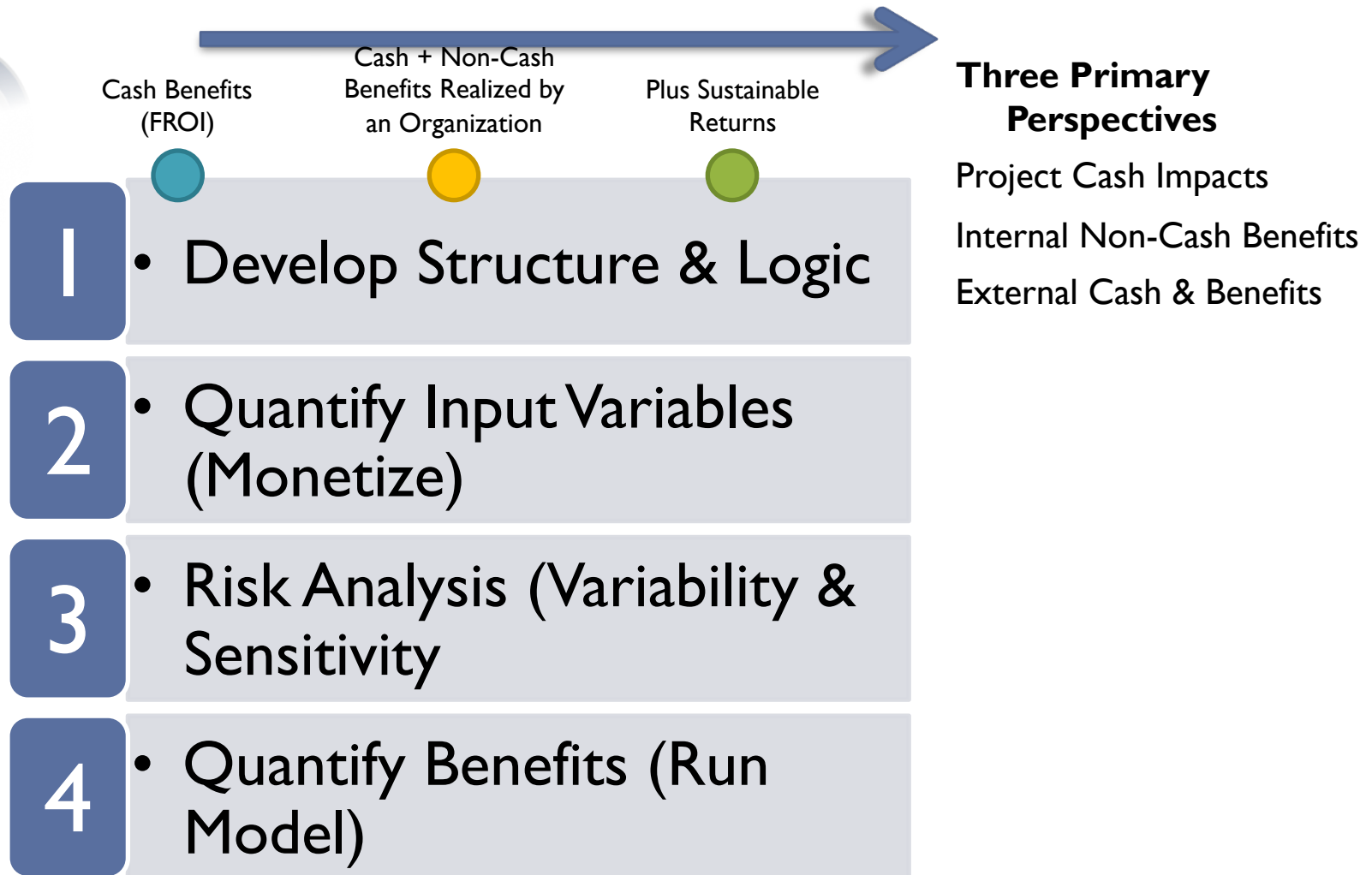
### Metrics in (\$000 USD)

SROI	Current Design	Alternative	Notes
<b>Annual Value of Benefits</b>	\$1,284,097	\$1,388,514	The total value of the benefits in one year
<i>Energy Reduction</i>	\$474,470	\$516,241	Cash benefit
<i>Water Reduction</i>	\$80,039	\$80,039	Cash benefit
<i>Greenhouse Gases Savings</i>	\$163,461	\$177,654	Non-cash benefit
<i>Air Pollutants Savings</i>	\$558,039	\$606,492	Non-cash benefit
<i>Savings From Reduced Water Use</i>	\$8,088	\$8,088	Non-cash benefit
<b>Net Present Value</b>	\$15,773,620	\$13,798,340	PV Benefits / PV All Costs
<b>Return on Investment</b>	39.3%	18.0%	Average Rate of Return on Capital Investment
<b>Discounted Payback Period</b>	4.6	7.7	Time in years + discounted cash flow
<b>Internal Rate of Return (%)</b>	31.0%	18.1%	Discount rate making NPV = 0
<b>Benefit to Cost Ratio</b>	4.7	2.8	PV Benefits / PV Costs

FROI	Current Design	Alternative	Notes
<b>Annual Value of Benefits</b>	\$554,870	\$596,193	The total value of the benefits in first year
<b>Net Present Value</b>	\$4,353,935	\$1,391,047	PV Benefits / PV All Costs
<b>Return on Investment</b>	15.9%	5.5%	Average Rate of Return on Capital Investment
<b>Discounted Payback Period</b>	12.9	25.0	Time in years to + positive discounted cash flow
<b>Internal Rate of Return (%)</b>	14.2%	6.8%	Discount rate making NPV = 0
<b>Benefit to Cost Ratio</b>	2.0	1.2	PV Benefits / PV Costs



# Three Perspectives Analyzed





# Analysis Results

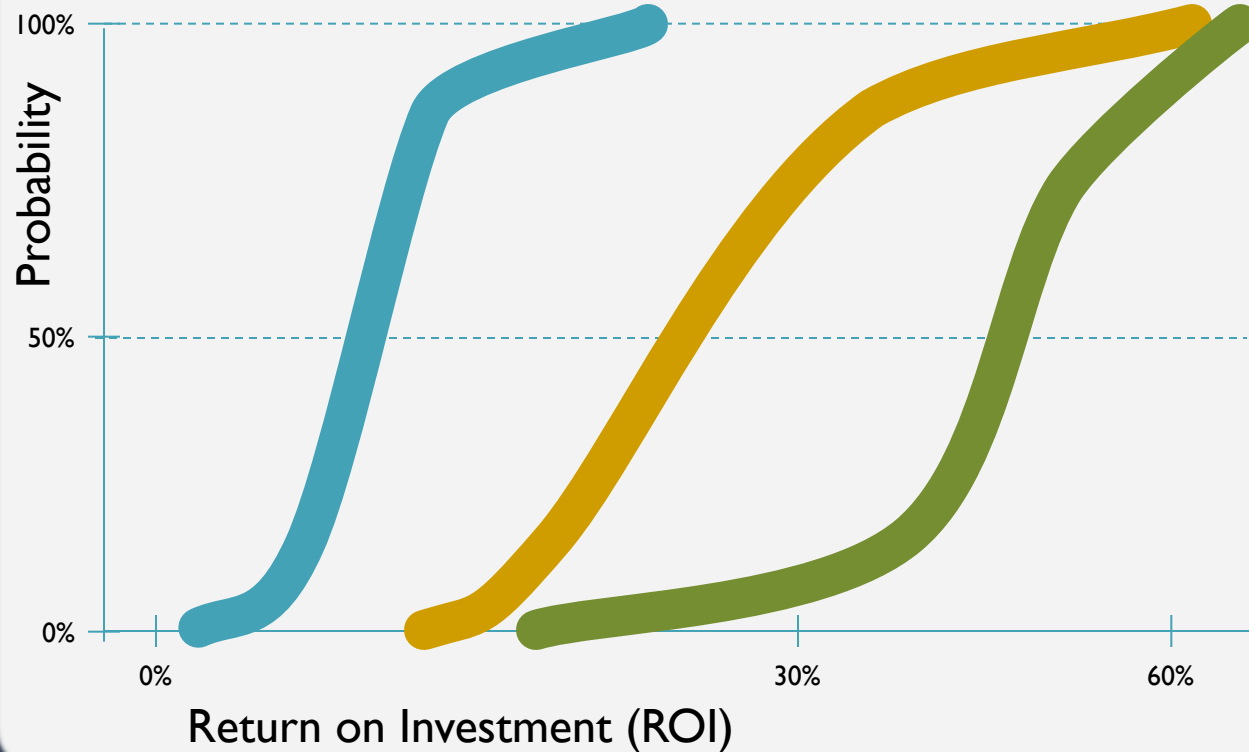
Cash Benefits  
(FROI)



Cash + Non-Cash  
Benefits Realized by  
an Organization



Plus Sustainable  
Returns



✓ Monetizing the variables provides ROI for the three perspectives

✓ Analyzing the potential variability of the input variables yields probability to address risk and identify sensitivity of your results to changes in key variables